10/1

c( ) → concatenate

向量 vector. 分量 component

as.numeric( ) 變成數字

length( ) 查有幾個分量

seq(x:y)

matrix (data, nrow, ncol, byrow)

10/8 row col

matrix [1:8, 3:5]

[-(1:8), 3:5]

rep (data, 重複幾次)

10/15

list (,) 列表

10/29 幾列 幾行

dim( ) → 10 8

install.package(" ")

library( )

ex. package: readxl

aaa = read_xlsx(" .xlsx")

abc = aaa [列,行] == "資料"

any(abc, ra.nm = T)

ex. package: stringr

str_locate (data, 要找的)

str_sub (data, 開始, 結束)

↘ 提出來要

名稱 ← function(input) {

運算

}

看類型 print(type())

int(float(52.6)) → 無條件捨去

字串長度 print(len()) → int

input() → 字串 string

print() → cast to a string

print("a"+"10") ✓

print("a"+10) ✗

a+=2 → a=a+2

a=b+8=10+2 ✗

if :

TAB statements ✗

else:

a=bool() 預設為 False

0 → False not 0 → True

= assignment, == comparison

operation A if condition else operation B

← True False →

ex.

min=(a if (a<=c) else c)

if :

elif :

else:

if not( ):

input ↓

CPU & Memory ↔ storage

output ↓

binary : 0 or 1 ↔ decimal :

first bit: $(-1)^{a_3}$ 正負號

$a_3\,a_2\,a_1\,a_0$

$8a_3+4a_2+2a_1+a_0$

$\rightarrow (-1)^{a_3}+4a_2+2a_1+a_0$

$a_5\,a_4\,a_3\,a_2\,a_1\,a_0$

$\rightarrow (-1)^{a_5}\times(2a_1+a_0)\times 2^{(-1)^{a_4}\times(2a_3+a_2)}$

ASCII code

Iteration 迴圈, 迭代

while condition:

break

continue → 這不是 condition, but assignment

for variables in list:

statements